



1600

RAW SEQUENCE LISTING

DATE: 01/28/2003

PATENT APPLICATION: US/09/677,653A

TIME: 17:02:22

Input Set : A:\A-58631-4.txt

Output Set: N:\CRF4\01282003\I677653A.raw

SEQUENCE LISTING

3 (1) GENERAL INFORMATION:
 4 (i) APPLICANT: P. D. CHRISTIAN, K. H. J. GORDON and
 5 T. N. HANZLIK
 7 (ii) TITLE OF INVENTION: INSECT VIRUSES AND THEIR USES IN
 8 PROTECTING PLANTS
 10 (iii) NUMBER OF SEQUENCES: 53
 12 (iv) CORRESPONDENCE ADDRESS:
 13 (A) ADDRESSEE: DORSEY & WHITNEY LLP
 14 (B) STREET: FOUR EMBARCADERO CENTER, SUITE 3400
 15 (C) CITY: SAN FRANCISCO
 16 (D) STATE: CALIFORNIA
 17 (E) COUNTRY: UNITED STATES OF AMERICA
 18 (F) ZIP: 94111
 20 (v) COMPUTER READABLE FORM:
 21 (A) MEDIUM TYPE: Floppy disk
 22 (B) COMPUTER: IBM PC compatible
 23 (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 24 (D) SOFTWARE: PatentIn Release #1.0, Version #1.25
 26 (vi) CURRENT APPLICATION DATA:
 C--> 27 (A) APPLICATION NUMBER: US/09/677,653A
 C--> 28 (B) FILING DATE: 03-Oct-2000
 29 (C) CLASSIFICATION:
 31 (viii) ATTORNEY/AGENT INFORMATION:
 32 (A) NAME: RICHARD F. TRECARTIN
 33 (B) REGISTRATION NUMBER: 31,801
 34 (C) REFERENCE/DOCKET NUMBER: A-58631-4/RFT/NBC
 36 (ix) TELECOMMUNICATION INFORMATION:
 37 (A) TELEPHONE: (415) 781-1989
 40 (2) INFORMATION FOR SEQ ID NO: 1:
 41 (i) SEQUENCE CHARACTERISTICS:
 42 (A) LENGTH: 13 base pairs
 43 (B) TYPE: nucleic acid
 44 (C) STRANDEDNESS: single
 45 (D) TOPOLOGY: linear
 47 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
 49 GGATCCACAG NNN
 51 (2) INFORMATION FOR SEQ ID NO: 2:
 52 (i) SEQUENCE CHARACTERISTICS:
 53 (A) LENGTH: 28 base pairs
 54 (B) TYPE: nucleic acid
 55 (C) STRANDEDNESS: single
 56 (D) TOPOLOGY: linear

ENTERED

13

RAW SEQUENCE LISTING

DATE: 01/28/2003

PATENT APPLICATION: US/09/677,653A

TIME: 17:02:22

Input Set : A:\A-58631-4.txt

Output Set: N:\CRF4\01282003\I677653A.raw

```

58      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
60 ATGGGCGATG CCGGCGTCGC GTTCACAG                                28
62 (2) INFORMATION FOR SEQ ID NO: 3:
63      (i) SEQUENCE CHARACTERISTICS:
64          (A) LENGTH: 27 base pairs
65          (B) TYPE: nucleic acid
66          (C) STRANDEDNESS: single
67          (D) TOPOLOGY: linear
69      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
71 ATGGAGGATG CTGGAGTGGC GTCACAG                                27
73 (2) INFORMATION FOR SEQ ID NO: 4:
74      (i) SEQUENCE CHARACTERISTICS:
75          (A) LENGTH: 27 base pairs
76          (B) TYPE: nucleic acid
77          (C) STRANDEDNESS: single
78          (D) TOPOLOGY: linear
80      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
82 ATGAGCGAGG CCGGCGTCGC GTCACAG                                27
84 (2) INFORMATION FOR SEQ ID NO: 5:
85      (i) SEQUENCE CHARACTERISTICS:
86          (A) LENGTH: 30 base pairs
87          (B) TYPE: nucleic acid
88          (C) STRANDEDNESS: single
89          (D) TOPOLOGY: linear
91      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
93 CCATCGATGC CGGACTGGTA TCCCAGGGGG                                30
96 (2) INFORMATION FOR SEQ ID NO: 6:
97      (i) SEQUENCE CHARACTERISTICS:
98          (A) LENGTH: 31 base pairs
99          (B) TYPE: nucleic acid
100         (C) STRANDEDNESS: single
101         (D) TOPOLOGY: linear
103      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
105 CCATCGATGC CGGACTGGTA TCCCAGGGGA C                            31
107 (2) INFORMATION FOR SEQ ID NO: 7:
108      (i) SEQUENCE CHARACTERISTICS:
109          (A) LENGTH: 39 base pairs
110          (B) TYPE: nucleic acid
111          (C) STRANDEDNESS: single
112          (D) TOPOLOGY: linear
114      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
116 CCATCGATGA TCCAGCCTCC TCGCGGCGCC GGATGGGCA                    39
118 (2) INFORMATION FOR SEQ ID NO: 8:
119      (i) SEQUENCE CHARACTERISTICS:
120          (A) LENGTH: 39 base pairs
121          (B) TYPE: nucleic acid
122          (C) STRANDEDNESS: single
123          (D) TOPOLOGY: linear
125      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

```

RAW SEQUENCE LISTING

DATE: 01/28/2003

PATENT APPLICATION: US/09/677,653A

TIME: 17:02:22

Input Set : A:\A-58631-4.txt

Output Set: N:\CRF4\01282003\I677653A.raw

```

127 GCTCTAGATC CATTGCGCCAT CCGAAGATGC CCATCCGGC      39
129 (2) INFORMATION FOR SEQ ID NO: 9:
130     (i) SEQUENCE CHARACTERISTICS:
131         (A) LENGTH: 39 base pairs
132         (B) TYPE: nucleic acid
133         (C) STRANDEDNESS: single
134         (D) TOPOLOGY: linear
136     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
138 CCATCGATTT ATGCCGAGAA GGTAACCAGA GAAACACAC      39
140 (2) INFORMATION FOR SEQ ID NO: 10:
141     (i) SEQUENCE CHARACTERISTICS:
142         (A) LENGTH: 39 base pairs
143         (B) TYPE: nucleic acid
144         (C) STRANDEDNESS: single
145         (D) TOPOLOGY: linear
147     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
149 GCTCTAGACC AGGTAATATA CCACAACGTG TGTTTCTCT      39
152 (2) INFORMATION FOR SEQ ID NO: 11:
153     (i) SEQUENCE CHARACTERISTICS:
154         (A) LENGTH: 45 base pairs
155         (B) TYPE: nucleic acid
156         (C) STRANDEDNESS: single
157         (D) TOPOLOGY: linear
159     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
161 GGGGGGAATT CATTAGGTG AACTATAGT TCTGCCTCCC CGGAC      45
163 (2) INFORMATION FOR SEQ ID NO: 12:
164     (i) SEQUENCE CHARACTERISTICS:
165         (A) LENGTH: 27 base pairs
166         (B) TYPE: nucleic acid
167         (C) STRANDEDNESS: single
168         (D) TOPOLOGY: linear
170     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:
172 GGGGGGATCC TGGTATCCCA GGGGGGC      27
174 (2) INFORMATION FOR SEQ ID NO: 13:
175     (i) SEQUENCE CHARACTERISTICS:
176         (A) LENGTH: 28 base pairs
177         (B) TYPE: nucleic acid
178         (C) STRANDEDNESS: single
179         (D) TOPOLOGY: linear
181     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:
183 CCGGAAGCTT GTTTTCTTT CTTACCA      28
185 (2) INFORMATION FOR SEQ ID NO: 14:
186     (i) SEQUENCE CHARACTERISTICS:
187         (A) LENGTH: 46 base pairs
188         (B) TYPE: nucleic acid
189         (C) STRANDEDNESS: single
190         (D) TOPOLOGY: linear
192     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:
194 GGGGGATCCG ATGGTATCCC GAGGGACGCT CAGCAGGTGG CATAGG      46

```

RAW SEQUENCE LISTING

DATE: 01/28/2003

PATENT APPLICATION: US/09/677,653A

TIME: 17:02:22

Input Set : A:\A-58631-4.txt

Output Set: N:\CRF4\01282003\I677653A.raw

```

196 (2) INFORMATION FOR SEQ ID NO: 15:
197     (i) SEQUENCE CHARACTERISTICS:
198         (A) LENGTH: 52 base pairs
199         (B) TYPE: nucleic acid
200         (C) STRANDEDNESS: single
201         (D) TOPOLOGY: linear
203     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:
205 AAATAATTTT GTTACTTTAG AAGGAGATAT ACATATGAGC GAGCGAGCAC AC      52
207 (2) INFORMATION FOR SEQ ID NO: 16:
208     (i) SEQUENCE CHARACTERISTICS:
209         (A) LENGTH: 55 base pairs
210         (B) TYPE: nucleic acid
211         (C) STRANDEDNESS: single
212         (D) TOPOLOGY: linear
214     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:
216 AAATAATTTT GTTAAACCTT AAGAAGGAGA TCTACATATG CTGGAGTGGC GTCAC      55
218 (2) INFORMATION FOR SEQ ID NO: 17:
219     (i) SEQUENCE CHARACTERISTICS:
220         (A) LENGTH: 30 base pairs
221         (B) TYPE: nucleic acid
222         (C) STRANDEDNESS: single
223         (D) TOPOLOGY: linear
225     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:
227 GGAGATCTAC ATATGGGAGA TGCTGGAGTG      30
229 (2) INFORMATION FOR SEQ ID NO: 18:
230     (i) SEQUENCE CHARACTERISTICS:
231         (A) LENGTH: 17 base pairs
232         (B) TYPE: nucleic acid
233         (C) STRANDEDNESS: single
234         (D) TOPOLOGY: linear
236     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:
238 GTAGCGAACG TCGAGAA      17
240 (2) INFORMATION FOR SEQ ID NO: 19:
241     (i) SEQUENCE CHARACTERISTICS:
242         (A) LENGTH: 31 base pairs
243         (B) TYPE: nucleic acid
244         (C) STRANDEDNESS: single
245         (D) TOPOLOGY: linear
247     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:
249 GGGGGATCCT CAGTTGTCTAG TGGCGGGGTA G      31
251 (2) INFORMATION FOR SEQ ID NO: 20:
252     (i) SEQUENCE CHARACTERISTICS:
253         (A) LENGTH: 28 base pairs
254         (B) TYPE: nucleic acid
255         (C) STRANDEDNESS: single
256         (D) TOPOLOGY: linear
258     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:
260 GGGGATCCCT AATTGGCACG AGCGGCGC      28
263 (2) INFORMATION FOR SEQ ID NO: 21:

```

RAW SEQUENCE LISTING

DATE: 01/28/2003

PATENT APPLICATION: US/09/677,653A

TIME: 17:02:22

Input Set : A:\A-58631-4.txt

Output Set: N:\CRF4\01282003\I677653A.raw

```

264      (i) SEQUENCE CHARACTERISTICS:
265          (A) LENGTH: 29 base pairs
266          (B) TYPE: nucleic acid
267          (C) STRANDEDNESS: single
268          (D) TOPOLOGY: linear
270      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:
272 AATTACATAT GGCGGCCGCC GTTCTGCC                29
274 (2) INFORMATION FOR SEQ ID NO: 22:
275      (i) SEQUENCE CHARACTERISTICS:
276          (A) LENGTH: 29 base pairs
277          (B) TYPE: nucleic acid
278          (C) STRANDEDNESS: single
279          (D) TOPOLOGY: linear
281      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:
283 AATTACATAT GTTCGCGGCC GCCGTTTCT                29
285 (2) INFORMATION FOR SEQ ID NO: 23:
286      (i) SEQUENCE CHARACTERISTICS:
287          (A) LENGTH: 19 amino acids
288          (B) TYPE: amino acid
289          (C) STRANDEDNESS: single
290          (D) TOPOLOGY: linear
292      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:
294 Phe Ala Ala Ala Val Ser Ala Phe Ala Ala Asn Met Leu Ser Ser Val
295 1          5          10          15
296 Leu Lys Ser
299 (2) INFORMATION FOR SEQ ID NO: 24:
300      (i) SEQUENCE CHARACTERISTICS:
301          (A) LENGTH: 20 amino acids
302          (B) TYPE: amino acid
303          (C) STRANDEDNESS: single
304          (D) TOPOLOGY: linear
306      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:
308 Pro Thr Leu Val Asp Gln Gly Phe Trp Ile Gly Gly Gln Tyr Ala Leu
309 1          5          10          15
310 Thr Pro Thr Ser
311          20
313 (2) INFORMATION FOR SEQ ID NO: 25:
314      (i) SEQUENCE CHARACTERISTICS:
315          (A) LENGTH: 6 amino acids
316          (B) TYPE: amino acid
317          (C) STRANDEDNESS: single
318          (D) TOPOLOGY: linear
320      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:
322 Phe Ala Ala Ala Val Ser
323 1          5
324 (2) INFORMATION FOR SEQ ID NO: 26:
326      (i) SEQUENCE CHARACTERISTICS:
327          (A) LENGTH: 23 base pairs
328          (B) TYPE: nucleic acid

```

VERIFICATION SUMMARY

DATE: 01/28/2003

PATENT APPLICATION: **US/09/677,653A**

TIME: 17:02:23

Input Set : **A:\A-58631-4.txt**Output Set: **N:\CRF4\01282003\I677653A.raw**

L:27 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]

L:28 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]